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4/9/24 (Item 13 from file: 15)
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TP-monitor vendors spin Web features

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ABSTRACT: NCR Corp. has developed enhancements to its Top End middleware that will let users deploy point-of-sale applications over the World Wide Web. Last week, NCR delivered a Java client to the Top End transaction-processing monitor, a Web-specific version of Top End designed to take advantage of the Internet and bypass weaknesses in standard Internet protocols. NCR has rewritten the Top End client code, which runs on PCs and sits inside **automated teller machines** and cash registers, as a set of **Java** class libraries.

TEXT: Headnote: NCR, IBM, BEA Systems enhance products to facilitate transactions over Web

NCR CORP., formerly AT&T Global Information Solutions, is out to turn the Internet into a giant virtual cash register with enhancements to its Top End middleware that will let users deploy point-of-sale applications over the World Wide Web.

NCR last week delivered a Java client to the Top End transactionprocessing (TP) monitor, a Webspecific version of Top End designed to take advantage of the Internet and bypass weaknesses in standard Internet protocols.

NCR will deliver an ActiveX client later this year.

NCR has rewritten the Top End client code, which runs on PCs and sits inside **automated teller machines** and cash registers, as a set of **Java** class libraries.

Rather than establishing a clientto-server connection using Common Gateway Interface (CGI), the Java client downloads into the Web browser and establishes a direct link to the Top End back-end application.

"This is the right way to do it," said John Mann, analyst at Yankee Group Inc., in Boston.

"Instead of going through the Web server and CGI on the back end, [NCR] lets Java set up a private TCP/IP connection. Sun [Microsystems Inc.] is trying to do the same thing with its Joe object request broker," Mann said.

Top End also supports CGI and Web server APIs from Netscape Communications Corp. and Microsoft Corp., but NCR officials said such Web standards are better for serving HTML pages than they are for client/server transactions.

Several analysts agreed.

"The Web is great for providing a universal client, but native Internet technology like CGI cannot handle Top End class applications," said Ed Acly, analyst with International Data Corp., in Framingham, Mass.

"The whole idea is to make one or 10,000 machines look as if they are local to your computing resource" said Jack Bissell, director of product

management for Top End.

Analysts also noted that NCR is not alone in trying to overcome limitations in Web protocols to enable transactions over the Web - a key step to database-intensive applications such as online commerce.

BEA Systems Inc. plans to release a Java interface for its Tuxedo TP monitor this summer. (See Vendors tighten knots on Web-database connection, ' June 17, page 6.)

IBM now offers a gateway between its CICS transaction monitor and Web browsers and plans to release a CICS Java client by year's end.

The CGI interface currently ships with Top End. Users can order the Java client for free at <http://www.ncr.com/product/topend>.

Sidebar: Analysts say TP monitors are critical for transactions on the Web.

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Java goes full circle

Anonymous

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ABSTRACT: Developers are coming back full circle to Sun Microsystems Inc.'s original plan for programming language, **Java** : applications for the nontraditional device. NCR Corp. will debut **automated teller machines** (ATM) and kiosks incorporating **Java** applets at the Bank Administration Institute's Retail Delivery Systems show in December 1996. **FICS** already has demonstrated a prototype set of **Java** applets on a browser-equipped ATM at SIBOS in Florence, Italy. **Java** is also popping up in many smart card applications, as well. As is the case with ATMs, **Java** brings platform independence to the smart card business, a much needed improvement given that there are at least a dozen different smart card protocols.

TEXT:

Sun Microsystems' programming language, **Java**, was originally intended to run on nontraditional devices, from TV set-top boxes and smart phones to microwave ovens. But the rise of the Internet and intranet drew Sun's attention, and the network and the PC quickly became the main sandbox for **Java** to play in. Now, developers are coming back full circle to the original plan: applications for the nontraditional device. Among the first wave are two prototypes of **Java** applets for ATMs and another for smart cards.

Look for Dayton, OH-based NCR Corp. to debut ATMs and kiosks incorporating **Java** applets at the Bank Administration Institute's Retail Delivery Systems show this month. And **FICS**, an eight-year-old financial software company in Brussels, already has demonstrated a prototype set of **Java** applets on a browser-equipped ATM at SIBOS in Florence, Italy, in October. **FICS** is installing browsers in ATMs manufactured by Groupe Bull, Paris.

Etienne Castiaux, research and development manager at **FICS**, explains the value of using **Java** in ATMs. "If all your ATMs are connected to a TCP/IP-compliant network, you can download functions to all the machines, even if you have different types of ATMs running on different platforms." The **Java**-coded functionality that **FICS** has developed includes the ability to read the magnetic stripe of a card, perform bill payments, retrieve balance and statement information and run advertisements incorporating full audio and video.

The strategy makes for cheaper IT development. "You can more easily upgrade an ATM to a multimedia kiosk, complete with videoconferencing,"

Castiaux explains. "And you can use the same objects on the ATM that you use for your Web site, so your Web site is more like an ATM for the home and vice versa." Such an approach "standardizes the user interface," making for a more consistent marketing message, explains Castiaux. A bank could even offer the ability to access the bank's Web site via the Internet or allow access to the entire Web from the ATM and charge fees for the service.

Ed Bachelder, director of Dove Associates in Boston, notes that this approach could bring one-on-one marketing to a whole new level. Since **Java** consumes less bandwidth than other programming languages, new information could be sent from the central server to ATMs faster than ever. ATMs could cross sell products to customers based on which transactions they performed.

on the telephone ten minutes ago, or on the Internet last night. FICS announced plans to develop a similar set of functions in Microsoft's Active X language. But since only

Microsoft browsers and operating systems can read Active X (for now), the Microsoft Internet Explorer browsers would need to be installed in the ATM. The applets would be stored on the ATM's PC-based operating system, as opposed to on the server, as in the Java paradigm.

ATMs on intranets

At NCR, Java-enabled browsers on ATMs are clearly one small piece of a larger strategy. "We're going to use intranet technology across the whole range of NCR solutions," explains Derek Waugh, NCR's product manager for self-service networking products. NCR is putting a massive database on a centralized server that ATMs will be able to access via an intranet data warehouse configuration (See "Web Warehouses Bring Data To Life," October 1996 BTN). The database will hold information on customer activities, across all banking channels.

Java applets residing on this central server will be distributed to consumers' PCs, the Internet, ATMs and kiosks. "ATMs and kiosks will be able to videoconference with call centers, and cross into more traditional retailing, like selling tickets for theater and football," says Waugh. These applets will provide one-on-one marketing of the bank's products, all with a consistent view.

Smarter cards

Java is popping up in many smart card applications, as well. As is the case with ATMs, Java brings platform independence to the smart card business, a much needed improvement given that there are at least a dozen different smart card protocols. Java will be used in a new card called CyberFlex from Schlumberger, to be piloted early next year. And Visa International has said it will use the protocol for a subsequent version of Visa Cash, its smart card pilot.

Explains Tom Ledsack, director of marketing and business development for Schlumberger Smart Card and Systems North America, Morristown, NJ, "Applets can reside on the smart card and on the server. You could design your applet to be downloaded from a network to any smart card or computer and it could be readily upgradable in the field." The small size of applets also holds great promise for multiple application cards, by allowing for more information to be planted into the processor chips.

Some say that Java applets may not be Visa and MasterCard's best friend. "Visa and MasterCard's main source of revenue is providing authorizations through their proprietary networks," points out Jerome Svigals, an electronic banking consultant in Redwood City, CA. With Java applets in smart cards, "I can do authorizations over any medium, like the telephone or the Internet." This could take a bite out of the card associations' bread and butter.

FICS is also writing Java applets so that ATMs can read Proton smart cards, a product developed by Banksys in Brussels. "We are also doing something with Proton for a major association based in the U.S." says Castiaux, who would not reveal the identity of the card association. Watch out as well for announcements of point-of-sale terminals incorporating Java.

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